REMARKS

The present application was filed on July 15, 2003, with claims 1-19. Claims 1-21 are currently pending. Claims 1 and 18-21 are the independent claims.

Claims 19-21 are rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

Claims 1-5, 8-12 and 14-20 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,487,212 (hereinafter "Erimli").

Claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over Erimli in view of U.S. Patent Publication No. 2002/0129158 (hereinafter "Zhang").

Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable over Erimli in view of U.S. Patent Publication No. 2002/0089929 (hereinafter "Tallegas").

Claims 13 and 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Erimli in view of U.S. Patent No. 6,636,527 (hereinafter "McNamara").

Applicants respectfully request reconsideration of the present application in view of the amendments above and remarks below.

Regarding the §101 rejection of claim 19, Applicants respectfully traverse on the ground that an article of manufacture comprising a computer-readable storage medium containing one or more software programs which when executed implement recited steps clearly discloses "executable programs." Notwithstanding the traversal, Applicants have amended independent claims 19-21 without prejudice, solely in order to expedite prosecution of the application by conforming the claims to the preference indicated by the Examiner.

Regarding the §101 rejection of claims 20 and 21, Applicants respectfully traverse. As discussed in MPEP §2106.01:

> In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) . . . .

> Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, [*In re Warmerdam*,] 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes

structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)(discussing patentable weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency) and *In re Warmerdam*, 33 F.3d 1354, 1360-61, 31 USPQ2d 1754, 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory).

Thus, rather than being "non-statutory subject matter because [they do] not disclose executable programs," as the Examiner contends, claims 20 and 21 recite statutory subject matter, namely, a computer-readable medium encoded with one or more data structures.

With regard to the §102 rejection of claim 1, Applicants initially note that MPEP 2131 specifies that a given claim is anticipated "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, MPEP 2131 indicates that the cited reference must show the "identical invention . . . in as complete detail as is contained in the . . . claim," citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Independent claim 1 is directed to a method of generating data traffic in a traffic generator comprising a step of generating a plurality of traffic flows. As described in the specification at, for example, page 6, lines 13-16, a traffic generator according to embodiments of the present invention may serve as a flexible test bed for use in conducting system design testing by allowing users to combine packet size and packet arrival time distribution models to generate a wide variety of user-customizable real-life traffic scenarios. See also page 7, lines 10, page 8, line 28 (discussing various models which may be used in conjunction with an illustrative embodiment of the traffic generator). See also the discussion of conventional traffic generators at page 1, line 16, to page 2, line 17 of the present specification.

In formulating the rejection of claim 1, the Examiner contends that the aforementioned limitations of claim 1 are met by portions of Erimli which the Examiner characterizes as teaching that a "switch includes a transceiver interface that transmits and receives data packets." Applicants respectfully submit that Erimli's teachings regarding a conventional switch transceiver which transmits <u>received</u> data packets (see, e.g., Erimli at column 5, lines 11-18) fail to teach the limitations

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of claim 1 directed toward a method of generating data traffic in a traffic generator comprising a step of generating a plurality of traffic flows.

Notwithstanding the above traversal, Applicants have amended claim 1 solely in order to expedite allowance by clarifying the claimed subject matter. More specifically, claim 1 has been amended to recite an additional limitation wherein the traffic flows comprise respective test traffic flows synthesized within the traffic generator. Support for this limitation may be found in the specification at, for example, page 1, lines 1-2; page 2, lines 20-21; page 3, lines 22-25; page 6, lines 13-18; page 8, lines 1-28; and page 9, lines 6-10.

Independent claims 18 and 19 have been amended in a manner similar to independent claim 1 and are thus believed to be patentable for at least the reasons identified above with regard to claim 1.

Independent claim 20 contains a limitation wherein information characterizing one or more traffic flows associated with at least one traffic generator is represented as a string which includes a global header followed by one or more frames each having an associated frame header, wherein the global header comprises a clock speed field indicating a clock speed of an associated output interface. In formulating the rejection of claim 20, the Examiner relies on Erimli at column 14, lines 33-37 (which discloses a buffer format bit indicative of whether a given buffer header is in a 12-byte format associated with a first buffer or a 4-byte format associated with a subsequent buffer); column 15, lines 27-30 (which discloses a format bit indicative of whether a subsequent field is a time stamp of the incoming frame or a frame length of the received frame); and column 15, lines 39-40 (which discloses, with added emphasis, that a host "can use the time stamp (along with the speed of the receive port) to gauge how much data it can fetch from external memory 36 without reading the frame data.") Applicants respectfully submit that the relied-upon portions of Erimli fail to teach at least the limitation of claim 20 wherein the global header comprises a clock speed field indicating a clock speed of an associated output interface.

Independent claim 21 contains a limitation wherein information characterizing one or more traffic flows associated with at least one traffic generator is represented as a string which includes a global header followed by one or more frames each having an associated frame header, wherein a given one of the frame headers comprises a timing field indicating a time gap in clock cycles between the corresponding frame and a previous frame. In an illustrative embodiment described in the specification at, for example, page 12, lines 6-9, the recited timing field may not only indicate the

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time gap in clock cycles between the current frame and the previous frame but also, for the first frame header, may also indicate the number of cycles, measured from the start of a simulation or other traffic generation process, after which the first frame is to be sent over the output interface.

The Examiner concedes that Erimli fails to teach or suggest the limitation of claim 21 wherein a given one of the frame headers comprises a timing field indicating a time gap in clock cycles between the corresponding frame and a previous frame. Rather, the Examiner contends that this limitation is taught by Lee at column 3, lines 21-23. The relied upon portion of Lee merely states that a "time slot includes three overhead bytes per cell, wherein the overhead bytes contains three fields of guard time, preamble and delimiter." Applicants respectfully submit that this portion of Lee fails to remedy the fundamental deficiency of Erimli and thus the proposed combination of Erimli and Lee fails to teach or suggest the limitation of claim 21 wherein a given one of the frame headers comprises a timing field indicating a time gap in clock cycles between the corresponding frame and a previous frame.

Moreover, even if one could combine the guard time field taught by Lee with the teachings of Erimli so as to reach the limitations of claim 21, the Examiner has failed to provide a cogent motivation for doing so. The Examiner states the motivation for the proposed combination "is that it allows the apparatus to avoid overlapping between frames." As has previously noted, claim 21 is directed toward an arrangement for use in connection with a traffic generator; as such, the apparatus need not incorporate guard time in order to avoid overlapping between frames. Indeed, the timing field recited in claim 21 is utilized by an embodiment of the claimed invention not to avoid overlapping between frames, but for use in conjunction with a packet time arrival model. For example, the timing field may used in generating a simulation of burst arrival, when a certain number of packets arrive substantially back-to-back, that is, one after another without any significant intervening time between arriving packets, as discussed in the present specification at, for example, page 1, line 28, to page 2, line 2.

Dependent claims 2-18 are believed to be patentable for at least the reasons identified above with regard to claim 1. Additionally, one or more of these claims defines separately patentable subject matter.

For example, claim 4 recites an additional limitation wherein the output interface is implemented as a software module representative of one or more physical connections. In

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formulating the rejection of claim 4, the Examiner fails to provide any indication of how Erimli meets its limitations. Since a dependent claim recites further limitations defining the claim from which it depends, an examiner, in rejecting dependent claims, must provide a detailed explanation of his or her reasoning in rejecting each and every claim, and not merely combine the dependent claims together with the independent claims for purposes of pointing with specificity the portions of the prior art reference relied upon.

Accordingly, Applicants respectfully submit that the present Office Action fails to comply with 35 U.S.C. §132(a) ("Whenever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Director shall notify the applicant thereof, stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application."); 37 CFR 1.104(c)(2) ("In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified."); and MPEP 706.02(j) ("Where a reference is relied on to support a rejection, whether or not in a minor capacity, that reference should be positively included in the statement of the rejection. See *In re Hoch*, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970). It is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to reply.")

Thus, in the event the present application is not considered to be in condition for allowance responsive to the remarks made herein, Applicants respectfully request that a new Office Action clearly setting forth a response to all arguments raised herein be issued and the new Office Action should be indicated as having a non-final status so that Applicants can be afforded a fair and reasonable opportunity to consider an appropriate response.

Moreover, not only is the rejection of claim 4 procedurally deficient, but it is also substantively incorrect. Applicants have reviewed the Erimli reference in its entirety, and respectfully submit that Erimli fails to contain any teaching or suggestion directed toward an output interface implemented as a software module representative of one or more physical connections.
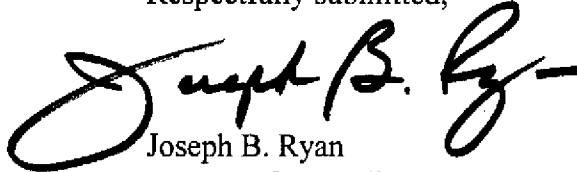
Claim 6 contains a limitation wherein the traffic generator is operable in at least two phases, including a first phase in which a timestamp table is constructed based at least in part on user-selected configuration information, and a second phase in which packets are generated using the timestamp table constructed in the first phase. The Examiner concedes that Erimli fails to disclose this limitation; instead, the Examiner relies upon paragraph 23 of Zhang. Applicants respectfully submit that the relied-upon portion of Zhang teaches a technique wherein an "edge conditioner receives the incoming packet and generates a VTRS packet 108 by associated a packet state including a packet virtual time stamp to the incoming packet [and a] core router uses the packet virtual time stamp included in the VTRS packet's packet state to schedule the transmission of the VTRS packet to the next core router 109 in the network core." Zhang fails to remedy the above-noted fundamental deficiency of Erimli, as it fails to teach or suggest the limitation of claim 6 wherein the traffic generator is operable in at least two phases, including a first phase in which a timestamp table is constructed based at least in part on user-selected configuration information, and a second phase in which packets are generated using the timestamp table constructed in the first phase.

In addition to being patentable for at least the reasons identified above with regard to claim 1, from which each depends, dependent claims 12 and 13 contain limitations similar to those of independent claims 20 and 21, respectively, and are therefore believed patentable for at least the reasons identified above with regard to claims 20 and 21.

Moreover, in formulating the rejections of both claim 14, which contains a limitation wherein the traffic generator comprises a hardware traffic generator, and claim 15, which contains a limitation wherein the traffic generator comprises a software traffic generator, the Examiner relies on Erimli at column 5, lines 25-43. Applicants respectfully submit that the relied-upon portion of Erimli discloses a switch containing various internal components as well as interfaces to enable external storage of packet data and switching logic. It contains no teachings directed toward the use of either a hardware traffic generator or a software traffic generator.

In view of the foregoing, claims 1-21 as amended are believed to be in condition for allowance.

Respectfully submitted,

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